UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,390	02/19/2004	Alexey D. Zinin	1400.1376750	4335

25697   7590   11/24/2008
ROSS D. SNYDER & ASSOCIATES, INC.
PO BOX 164075
AUSTIN, TX 78716-4075

EXAMINER
CHRISS, ANDREW W

ART UNIT	PAPER NUMBER
2419	

MAIL DATE	DELIVERY MODE
11/24/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 July 2008</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-38</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-38</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>19 February 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   Applicant's amendment, filed July 28, 2008, has been entered and carefully considered.

Claims 1-38 are currently pending.

Specification

2.   Applicant is reminded of the proper language and format for an abstract of the disclosure.

       The abstract should be in narrative form and generally limited to a single paragraph on a
separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed
150 words in length since the space provided for the abstract on the computer tape used by the
printer is limited. The form and legal phraseology often used in patent claims, such as "means"
and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist
readers in deciding whether there is a need for consulting the full patent text for details.

       The language should be clear and concise and should not repeat information given in the
title. It should avoid using phrases which can be implied, such as, "The disclosure concerns,"
"The disclosure defined by this invention," "The disclosure describes," etc.

3.   The abstract of the disclosure is objected to because it is longer than 150 words.

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

4.   The text of those sections of Title 35, U.S. Code not included in this action can be found

in a prior Office action.

5.   **Claims 20-38 are** rejected under 35 U.S.C. 112, first paragraph, because the claimed

apparatus comprising a network element comprises a single means and therefore is regarded as

undue breadth. Per MPEP 2164.08(a): "A single means claim, i.e., where a means recitation

does not appear in combination with another recited element of means, is subject to an undue

breadth rejection under 35 U.S.C. 112, first paragraph. *In re Hyatt*, 708 F.2d 712, 714-715, 218

USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means

for achieving the stated purpose was held nonenabling for the scope of the claim because the

specification disclosed at most only those means known to the inventor.) When claims depend on

a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every

conceivable structure (means) for achieving the stated property (result) while the specification

discloses at most only those known to the inventor."

6.   The text of those sections of Title 35, U.S. Code not included in this action can be found

in a prior Office action.

7.   **Claims 4-16 and 23-36** are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. The claim language cites a method step and apparatus

functionality of "applying interface groups." However, Applicant's specification is not clear as

to what this step comprises. Applicant's specification discloses comparing an interface attributes

of inbound and outbound interfaces (paragraphs 0058 and 0062) which results in a specific

routing behavior. However, the step/functionality of applying interface groups, given its

broadest reasonable interpretation, could be interpreted as an interface assignment, rather than

the disclosed comparison. For examination purposes, Examiner assumes that the step of

applying an interface group comprises assigning an interface group.

Claim Rejections - 35 USC § 103

8.   The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9.   **Claims 1, 2, 17, 20, 21, and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan et al (United States Patent 7,046,680), hereinafter McDysan, in view of Henderson et al (United States Patent Application Publication US 2003/0152078 A1), hereinafter Henderson.

      Regarding Claims 1 and 20, McDysan discloses a method and access device (Figure 3, 40) comprising a marker/policer 82 that marks a packet by setting bits in a DiffServ Type of Service (TOS) byte in an IP packet header (column 7, line 58-column 8, line 4), which is known by one of ordinary skill in the art to comprise Layer-3 control information. However, McDysan does not expressly disclose encapsulating the packets at Layer-2. In the same field of endeavor, Henderson discloses a MAC (i.e., Layer 2) header representing the outermost encapsulation of an IP packet (paragraph 0094). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Layer 2 encapsulation disclosed in Henderson with the Diffserv packet marking disclosed in McDysan in order to perform packet editing and filtering at an OSI layer lower than the application layer (see Henderson, paragraphs 0005 and 0006).

      Regarding Claims 2 and 21, McDysan discloses setting a DiffServ TOS byte in an IP packet header, as described with regards to Claim 1 above, therefore equivalent to Applicant's claimed functionality of marking the packets using a unique protocol identifier.

      Regarding Claims 17 and 36, McDysan does not expressly disclose encapsulating the packets according to control encapsulation. In the same field of endeavor, Henderson discloses a

MAC (i.e., Layer 2) header representing the outermost encapsulation of an IP packet (paragraph

0094). It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the Layer 2 encapsulation disclosed in Henderson with the Diffserv packet

marking disclosed in McDysan in order to perform packet editing and filtering at an OSI layer

lower than the application layer (see Henderson, paragraphs 0005 and 0006).

10.   **Claims 3 and 22** rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in

view of Henderson as applied to claims 1 and 20 above, and further in view of Nakamichi et al

(United States Patent Application Publication US 2002/0085498 A1), hereinafter Nakamichi.

McDysan and Henderson disclose all of the limitations of Claims 1 and 20, as described above.

However, the references do not expressly disclose marking the packets using a link-local MPLS

label. In the same field of endeavor, Nakamichi discloses using a "link state type" field in a link

state advertisement (LSA) in an MPLS network. Specifically, Nakamichi discloses a value for

said field that denotes "link-local," indicating that the flooding scope is within a local

(sub)network (paragraphs 0065 and 0066). It would have been obvious to one of ordinary skill

in the art at the time the invention was made to combine the link state advertisement disclosed in

Nakamichi with the marker/policer disclosed in McDysan, as modified above, in order to allow a

node in a communications network to collect traffic information and perform load sharing

depending on traffic conditions.

11.   **Claims 4-12 and 23-31** rejected under 35 U.S.C. 103(a) as being unpatentable over

McDysan in view of Henderson as applied to claims 1 and 20 above, and further in view of Yu et

al (United States Patent Application Publication US 2004/0010583 A1), hereinafter Yu.

Regarding Claims 4 and 23, McDysan and Henderson disclose all of the limitations of
Claims 1 and 20, as described above. Further, McDysan discloses a determination by the
marker/policer as to when marking a packet comprising IP control information should be
performed (column 7, line 58-column 8, line 4). However, the references do not expressly
disclose applying interface groups. In the same field of endeavor, Yu discloses the use of
interface groups to facilitate virtual router redundancy protocol (VRRP) failover. The interface
may include an IP address, VPN tunnel, WAN physical interface, among others (paragraph
0022). The interface group is assigned a name to enable it to be referenced at a later time
(paragraph 0025). It would have been obvious to one of ordinary skill in the art at the time the
invention was made to combine the interface group application disclosed in Yu with the control
packet marking disclosed in McDysan, as modified above, in order to withstand failures of
network device components, without triggering unnecessary failover in a network device.

Regarding Claims 5 and 24, Yu further discloses packet communications within a
particular interface group (Figure 1, interface group defined between interfaces 'a' and 'd' within
network device A). It would have been obvious to one of ordinary skill in the art at the time the
invention was made to combine the interface group application disclosed in Yu with the control
packet marking disclosed in McDysan, as modified above, in order to withstand failures of
network device components, without triggering unnecessary failover in a network device.

Regarding Claims 6 and 25, Yu further discloses interface groups assigned to backbone
interfaces (Figure 4, static tunnel through Internet between network device A and network device
B). It would have been obvious to one of ordinary skill in the art at the time the invention was
made to combine the interface group application disclosed in Yu with the control packet marking

disclosed in McDysan, as modified above, in order to withstand failures of network device
components, without triggering unnecessary failover in a network device.

Regarding Claims 7 and 26, Yu further discloses interface groups assigned to interfaces
with customer-specific interface groups (Figure 4, interface 'a' between network device A and
Host PC). It would have been obvious to one of ordinary skill in the art at the time the invention
was made to combine the interface group application disclosed in Yu with the control packet
marking disclosed in McDysan, as modified above, in order to withstand failures of network
device components, without triggering unnecessary failover in a network device.

Regarding Claims 8 and 27, Yu further discloses applying interface groups to peer
interfaces (Figure 4, static tunnel between network device A and network device D). It would
have been obvious to one of ordinary skill in the art at the time the invention was made to
combine the interface group application disclosed in Yu with the control packet marking
disclosed in McDysan, as modified above, in order to withstand failures of network device
components, without triggering unnecessary failover in a network device.

Regarding Claims 9-12 and 28-31, Yu further discloses applying interface groups to
packet communications between interface groups (Figure 4, connections between peer,
backbone, and customer networks at network device A). It would have been obvious to one of
ordinary skill in the art at the time the invention was made to combine the interface group
application disclosed in Yu with the control packet marking disclosed in McDysan, as modified
above, in order to withstand failures of network device components, without triggering
unnecessary failover in a network device.

12.   **Claims 13 and 32** rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan

in view of Henderson and Yu, as applied to claims 4 and 23 above, and further in view of Chuah

et al (United States Patent Application Publication US 2004/0054924 A1), hereinafter Chuah.

McDysan, Henderson, and Yu disclose all of the limitations of Claim 4, as described above.

However, the aforementioned references do not expressly disclose applying interface groups to

communication of ICMP packets. In the same field of endeavor, Chuah discloses routers

performing probabilistic marking of IP packets or intentional ICMP trace-backs in order to trace

the source of an attack (paragraph 0062). It would have been obvious to one of ordinary skill in

the art at the time the invention was made to combine the ICMP trace-back disclosed in Chuah

with the marker/policer disclosed in McDysan, as modified by Ho and Yu above, in order to

detect and block IP packets involved in DDOS attacks.

13.   **Claims 14 and 33** rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan

in view of Henderson and Yu, as applied to claims 4 and 23 above, and further in view of Pan et

al (United States Patent 7,336,615), hereinafter Pan. McDysan, Henderson, and Yu disclose all

of the limitations of Claim 4, as described above. However, the aforementioned references do

not expressly disclose applying interface groups to communication of ping packets. In the same

field of endeavor, Pan discloses assigning predetermined port numbers to LSP ping messages

(column 14, lines 48-55). It would have been obvious to one of ordinary skill in the art at the

time the invention was made to combine ping message port assignment disclosed in Pan with the

marker/policer disclosed in McDysan, as modified by Ho and Yu above, in order to

automatically detect the status of a label switched path.

14.   **Claims 15 and 34** rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan

in view of Henderson and Yu, as applied to claims 4 and 23 above, and further in view of

Fotedar (United States Patent Application Publication US 2004/0085965 A1). McDysan,

Henderson, and Yu disclose all of the limitations of Claim 4, as described above. However, the

aforementioned references do not expressly disclose applying interface groups to communication

of traceroute packets. In the same field of endeavor, Fotedar discloses assignment of traceroute

packets to a virtual router address indicative of a loopback interface (paragraph 0011). It would

have been obvious to one of ordinary skill in the art at the time the invention was made to

combine the traceroute packet assignment disclosed in Fotedar with the marker/policer disclosed

in McDysan, as modified by Ho and Yu above, in order to enable direct communications

between a virtual router and a virtual address, without having to know a physical address.

15.   **Claims 18 and 37** rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan

in view of Henderson as applied to claims 1 and 20 above, and further in view of Johansson

(United States Patent 6,061,330). McDysan and Henderson disclose all of the limitations of

Claims 1 and 20, as described above. However, the references do not expressly disclose

receiving unmarked control packets using rate-limited queues. In the same field of endeavor,

Johansson discloses an ATM switch receiving packets into rate-limited queues (Figure 1, 116;

Figure 4a, 410). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the rate-limited queuing disclosed in Johansson with the

unmarked control packets (i.e., packets received prior to being marked) disclosed in McDysan,

as modified above, in order to perform fair queuing scheduling using both buffer occupancy and

input rate.

16.   **Claims 19 and 38** rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan

in view of Henderson as applied to claims 1 and 20 above, and further in view of Hussey et al

(United States Patent Application Publication US 2001/0049744 A1), hereinafter Hussey.

McDysan and Henderson disclose all of the limitations of Claims 1 and 20, as described above.

Further, McDysan discloses receiving packets (Figure 3). However, the aforementioned

references do not expressly disclose processing the received packets at a line rate. In the same

field of endeavor, Hussey discloses a processor pool aggregation technique wherein a received

packet data stream is capable of being processed at a line rate (paragraph 0050). It would have

been obvious to one of ordinary skill in the art at the time the invention was made to combine the

packet processing disclosed in Hussey with the marker/policer disclosed in McDysan, as

modified above, in order to improve data processing within a data-handling device.

Response to Arguments

17.   Applicant's arguments filed July 28, 2008 regarding rejection of Claims 20-38 under 35

U.S.C. 112, first paragraph, have been fully considered but they are not persuasive. Applicant

states that the claim does not recite "means for" and therefore does not invoke 35 U.S.C. 112,

sixth paragraph. However, Examiner is not attempting to invoke 35 U.S.C. 112, sixth paragraph,

in order to determine the metes and bounds of said rejected claims. Rejecting claims under 35

U.S.C. 112, first paragraph, requires a means recitation (i.e., structure, component), but not

specifically the claim language "means for" or "step for." In the instant application, the means

recitation is the claimed "network element," which does not appear in combination with another

recited element of means (i.e., another structural element or component). Therefore, rejection of

Claims 20-38 under 35 U.S.C. 112, first paragraph, is maintained.

18.   Applicant's arguments filed July 28, 2008 regarding rejection of Claims 4-16 and 23-36

under 35 U.S.C. 112, second paragraph, have been fully considered but they are not persuasive.

Applicant states that Examiner mischaracterizes what claim 4-16 and 23-36 actually recite and

that claims that depend from Claims 4 and 23 recite subject matter beyond what Examiner

alleges. Examiner respectfully disagrees. The claim language "applying interface groups" is not

clearly defined in the specification. Despite the claims at issue reciting alleged results of the

aforementioned functionality, it is unclear what the step of "applying interface groups" actually

comprises. In order to further prosecution, Examiner has given said claim language its broadest

reasonable interpretation in view of the specification, as set forth in the rejection above.

Rejection of said claims under 35 U.S.C. 112, second paragraph, is maintained.

19.   Applicant's arguments, filed July 28, 2008, with respect to the rejection of claims 1, 2,

17, 20, 21, and 36 under 35 U.S.C. 103(a) have been fully considered and are persuasive.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new

ground(s) of rejection is made in view of Henderson's disclosure of Layer-2 packet

encapsulation. Regarding Applicant's arguments with respect to Claim 2 and 21, Applicant

states that the DiffServ TOS byte in an IP packet header disclosed in McDysan fails to disclose

or suggest the claim limitation of a "unique protocol identifier." However, given its broadest

reasonable interpretation in view of the specification, a DiffServ TOS byte would be known to

one of ordinary skill in the art to comprise a unique identifier in an Internet Protocol (IP)

network. Regarding Applicant's arguments with respect to Claim 17 and 36, Applicant's

arguments are moot in view of the new grounds of rejection. Regarding Applicant's arguments

with respect to Claim 3 and 22, Applicant states that Examiner does not allege motivation as to

why one of ordinary skill in the art at the time the invention was made would purportedly

combine the teaching as such a "peculiar LSA in OSPF" (see paragraph 0050 of Nakamichi)

with other alleged teachings. Examiner respectfully disagrees. Examiner notes that the

Nakamichi reference is a translation of a Japanese document and the term "peculiar" may have a

different meaning than that interpreted by Applicant. Regardless of said term's meaning, the

passage cited by Applicant is not relied upon to reject Claims 3 and 22. Nakamichi discloses a

link-local LSA indicating that the flooding scope is within a local (sub)network (paragraphs

0065 and 0066). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the link state advertisement disclosed in Nakamichi with the

marker/policer disclosed in McDysan, as modified above, in order to allow a node in a

communications network to collect traffic information and perform load sharing depending on

traffic conditions. Regarding Applicant's arguments with respect to Claims 4-13 and 23-32,

Applicant states that the cited art fails to disclose or suggest "applying interface groups" to

enable various results. However, as stated above, the claim language "applying interface

groups" is not clearly defined in the specification. Despite the claims at issue reciting alleged

results of the aforementioned functionality, it is unclear what the step of "applying interface

groups" actually comprises. In order to further prosecution, Examiner has given said claim

language its broadest reasonable interpretation in view of the specification, as set forth in the

rejection of Claims 4-16 and 23-36 under 35 U.S.C. 112, second paragraph, above. Regarding

Applicant's arguments with respect to Claims 14, 15, 33, and 34, Applicant states that the cited

combinations would be rendered inoperable, but fails to provide further evidence. Regarding

Applicant's arguments with respect to Claims 18 and 37, Applicant states that "Examiner

mischaracterizes the teachings of the Johansson reference." Examiner respectfully disagrees.

Johansson discloses an ATM switch (Figure 1) comprising and input and output device (Figure

2), wherein ATM cells (unmarked control packets) are received at rate-limited queues (Figure

4a, 110). Regarding Applicant's arguments with respect to Claims 19 and 38, Applicant states

that "the Examiner has not presented any evidence that the purported combination of the

teachings of Hussey and those of the other cited references would not also 'otherwise overwhelm

the processing capabilities of the NIC 160 and result in dropped packets and reduced quality of

service'" (see Hussey, paragraph 0050). Examiner respectfully disagrees. Examiner notes that

the passage of the Hussey reference cited by Applicant refers to the benefit disclosed in Hussey,

rather than an admitted deficiency of the prior art. Hussey discloses processing received packets

at a line rate and, in combination with the received packets disclosed in the combination of

McDysan and Henderson, teaches all of the claimed limitations.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Andrew Chriss whose telephone number is (571)272-1774. The

examiner can normally be reached on Monday - Friday, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrew Chriss
Examiner
Art Unit 2419
11/17/2008

/Hassan Kizou/
Supervisory Patent Examiner, Art Unit 2419